

Remarks/Arguments:

Reconsideration of the application as amended is respectfully requested.

Claims 1-120 are in the application. In view of a previous election, claims 1-31 are presently pending, with claims 32-120 having been withdrawn from consideration. Claims 1, 11 and 27 have been amended herein.

In the Official Action, the Examiner rejected claims 1-31 under 35 U.S.C. §112, second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention. First, the Examiner asserted that the phrase "electrically tight" is vague and indefinite as used in claim 1. In response, reference is made to Applicants' specification at page 12, lines 22-24, wherein it is indicated that "tight seals" are such having "optimal resistance of values greater than 0.5 gigaohms". Accordingly, one skilled in the art would understand the term "electrically tight" in claim 1, particularly in view of the passage from Applicants' specification.

Second, the Examiner asserted that the use of the term "Teflon" in claim 11 is not proper. In response, the term "Teflon" has been replaced with its generic name, "polytetrafluoroethylene". Third, the Examiner asserted that claim 26 is a duplicate of claim 20. However, claim 26 is directed to a configuration where "the second layer is positioned over the first layer" while claim 20 is directed to a configuration where "the second layer is positioned under the first layer". It is thus apparent that the two claims are not, in fact, identical. Finally, the Examiner objected to the phrase "secreted by the cell" in claim 27. In response, claim 27 has been amended to indicate that the relevant enzyme is "being secreted by the contacted cell". In sum, it is respectfully submitted that with the amendments presented herein, the claims are in accordance with 35 U.S.C. §112.

In the Official Action, the Examiner further rejected claims 1-3, 6-9, 12-13, 20 and 28-31 under 35 U.S.C. §102(e) as being anticipated by Baumann et al. (U.S. Patent No. 6,475,760).

Baumann et al. is directed to a method for intracellular manipulation of a biological cell which utilizes a support area 5. The support area 5 is formed of an electrical insulator 9 and a substrate 12, as shown in Figure 2. A poration tool 6 extends through a pore in the support area 5 and is positioned to allow for perforation of a cell. Neither electrical insulator 9 nor substrate 12 spans across a pore of the support area 5.

Claim 1 is directed to an apparatus for measuring cellular electrical conditions which includes a cell support membrane having "a first layer comprising a non-conductive material

comprising a top surface and bottom surface and including one or more pores", and a second layer comprising a "non-conductive, sealant material which contacts the first layer of the Cell Support Membrane and spans across at least one pore." With the invention of claim 1, parallel ion channel testing can be achieved at multiple pores without having to assure an electrically tight seal is present at every pore. Rather, with the subject invention, pores can be selected and exposed for ion channel testing, e.g., by enzymatic digestion or photo-ablation, depending on cellular contact. There is no disclosure or suggestion in Baumann et al. to provide a sealant member that spans one or more pores of its support area. It is respectfully submitted that claim 1, along with dependent claims 2-3, 6-9, 12-13, 20 and 28-31, are patentable over Baumann et al.

Claims 4, 5, 14-18 and 19 were rejected under 35 U.S.C. §103(a) as being unpatentable over Baumann et al. in view of Owen et al. (WO 99/66329). The Examiner pointed out various deficiencies of Baumann et al. and relied on Owen et al. to overcome such.

Owen et al. is directed to a high throughput screen which utilizes a porous structure for conducting ion channel testing. The porous structure has open pores on which it is desired to provide one contiguous layer of cells. (See, e.g., page 10, lines 5-8). As a result, and as pointed out at page 25, lines 8-21, taken electrical measurements are relative to the entire contiguous layer of cells, rather than to individual cells.

Owen et al., however, does not disclose or suggest using a non-conductive layer to span across at least one pore of its structure. Rather, Owen et al. seeks to provide a contiguous layer of cells to avoid having an insufficiently sealed pore. A hypothetical combination of Baumann et al. and Owen et al. would produce a structure which seeks to obtain a contiguous layer of cells on a substrate. There would, however, not be any disclosure or suggestion flowing from the hypothetical combination for providing a non-conductive layer which spans at least one pore. It is respectfully submitted that claims 4, 5, 14-18 and 19, as depending from claim 1, are patentable over Baumann et al. and Owen et al., each taken alone or in combination.

Claims 10-11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Baumann et al. in view of Goldberg et al. (U.S. Patent No. 4,961,954). The Examiner admitted that Baumann et al. fails to explicitly disclose using material to inhibit cell attachment and relied on Goldberg et al. to overcome such.

Claims 10 and 11 depend from claim 1. Goldberg et al. is directed to various medical devices and instruments having specific surface preparations. There is no disclosure or suggestion in Goldberg et al. to modify the Baumann et al. structure to overcome the deficiency noted above in

discussing claim 1. It is respectfully submitted that claims 10 and 11, as depending from claim 1, are patentable over Baumann et al. and Goldberg et al., each taken alone or in combination.

Claims 21-25 were rejected under 35 U.S.C. §103(a) as being unpatentable over Baumann et al. in view of Zavisian et al. (U.S. Patent No. 5,995,867). The Examiner noted that Baumann et al. fails to disclose microscope-assisted photo-ablation to remove the second layer, and Zavisian et al. was relied upon to overcome such.

Claims 21-25 depend from claim 1. Zavisian et al. is directed to a confocal microscope and clearly does not provide any disclosure or suggestion to overcome the deficiency noted above with respect to Baumann et al. It is respectfully submitted that claims 21-25, as depending from claim 1, are patentable over Baumann et al. and Zavisian et al., each taken alone or in combination.

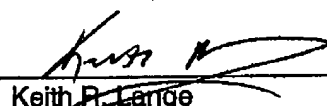
Claim 27 was rejected under 35 U.S.C. §103(a) as being unpatentable over Baumann et al. in view of Iwata et al. (International Journal of Biological Macromolecules, 1999 25:169-176). The Examiner noted that Baumann et al. fails to disclose the use of enzymatic degradation to remove the polymer materials of the second support layer and relied on Iwata et al. to overcome such.

Claim 27 depends from claim 1. Iwata et al. is directed to specific crystals and enzymatic degradation thereof, and there is no disclosure or suggestion in Iwata et al. to overcome the deficiency of Baumann et al. noted above. It is therefore respectfully submitted that claim 27, as depending from claim 1, is patentable over Baumann et al. and Iwata et al., each taken alone or in combination.

Favorable action is earnestly solicited. If there are any questions or if additional information is required, the Examiner is respectfully requested to contact Applicants' attorney at the number listed below.

Respectfully submitted,

Bristol-Myers Squibb Company
Patent Department
P.O. Box 4000
Princeton, NJ 08543-4000
(609) 252-3883


Keith P. Lange
Attorney for Applicant
Reg. No. 44,201

Date: February 27, 2004